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Personnel
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The Armco Foreman-Manager Training Program

By C. H. Murray, *Director, Personal Service*

BILL BITTERS finally reformed, but he waited until he was a gray-haired man with children grown. I have known Bill for twenty years. His intentions always were above reproach. Each year when the evangelist came to town, Bill would regularly be one of the first customers. But it didn't last. Three months later he would be back in the same old Saturday night habits. When Bill changed his ways for good and all, rip-snorting evangelism deserved little credit. For the first time he fully understood what a plain thimblewit he had been all those years. This he had admitted many times in his life, but it had never traveled any further up than his vocal cords. When it percolated through his brain, Bill permanently turned over a new leaf.

When you come to think of it, safety work was first taught by exhortation, sort of camp meeting days you might say. Loud talk, signs of "Safety First," and other methods of exploitation produced but temporary results. It is easy to apply hindsight to those pioneering days of safety, with that "I-told-you-so" attitude. Any pioneer effort naturally contains its flaws, which time and observation correct. To organized safety work can be traced many of the worth-while personnel activities of the present day. It was the first great industry-wide movement, requiring concerted group effort by employer and employee.

But safety can't be promoted by exhortation. It requires an understanding, a complete knowledge of all the operations with which each operator is involved. Thus far, the history of accident prevention has been divided into two periods. The period of exhortation evolved into an era of guarding machinery and equipment, and it is now in the waning days of this period that the viewpoint of many of the foremost authorities in accident prevention work is changing. They feel the need of something new, something perhaps a little more constructive and permanent than anything that has gone before. Industry is once more on the threshold of a new era, a period when intensive training programs will entirely encompass the isolated safety program. In fact, it has already dawned in many quarters. Last year, The American Roll-

The object of the publications of the American Management Association is to place before the members ideas which it is hoped may prove interesting and informative, but the Association does not stand sponsor for views expressed by authors in articles issued in or as its publications.

ing Mill Company decided to concentrate its efforts solely on the training of men, firmly believing that when we trained men to do their work right, we were making progress in the direction of safety. So the departments of Safety and Training were combined, to carry on a synonymous program. The Staff Supervisor of Safety, Mr. R. G. Adair, was made Staff Supervisor of Safety and Training, and given the joint task of training both for efficiency and safety in all our plants.

Heretofore, our training work had been voluntary, therefore "spotty." It had been perhaps too academic to bring tangible immediate results, dealing too much with debatable, weighty educational subjects. The safety program which we then recognized as training under another guise was just the reverse. It was completely tied up with the things the worker did every day; it touched everyone in the organization; and it went hand in hand with greater production and lowered costs. We still needed a plan to carry a broad intensive training program to the 10,000 members of the Armco organization.

When organized personnel work was initiated in our organization many years ago, a company policy was established that the works manager is responsible for safety, for training, for everything that affects his people. All personnel departments work in a staff capacity either to the plant or general management. Following the principles of line organization, everything is transmitted to the department superintendent, to the foreman. Here, we realized, was the strategic man to train. So our entire training program was cast into pot, and from it came foreman-manager training.

Foreman-manager training is not academic, not complex. It is, in fact, a very simple thing, so tangible and so familiar that foremen, recognizing a well-known tool, take hold at once and begin to plow their furrows in mid-season form. It is a program which conveys to the foreman an appreciation and clarification of his actual responsibility and at the same time improves his job technique.

The term "foreman-manager" is logical enough. There are general managers, works managers, department monagers—so why not "foreman-managers." What isn't this key man of industry responsible for? What organizational activity is there that he doesn't have his hand in? He is the only figure in the industrial fabric that represents the elements of management and men—of the worker to management, and of management to the men.

Three premises were adopted to provide a foundation for the program. First, the foreman is a manager. He exercises enough coinciding functions, of a relative degree, to compare his job with the general manager's. Though the chief executive may be responsible for 10,000 men, and the foreman but 10, there is a shadow-like similarity. The general manager is charged primarily by the board of directors to produce the greatest quantity of quality

goods at the lowest cost. Though the foreman be concerned with but a single operation, again he is comparable on a functional basis. To do his job effectively the foreman must have the managerial viewpoint—must know what is expected of a manager. Secondly, as is expected of every manager, his efforts must be directed at lowering the costs of production of quality materials. Thirdly, the most important contributor toward decreased costs is economy in all its phases, conserving and using to the utmost all of the elements that comprise costs.

The first two deal with the mind—a clarification of responsibility, while the third premise furnishes a familiar tool which sharpens the foreman's managerial faculties, and with which he and his men can produce immediate results, and simultaneously improve their job knowledge.

When we seriously got into the business of analyzing the foreman's functions, we were astounded at the regularity with which all of his duties lead toward the conservation of company resources. It simply encompasses his job. Every department is operated on a platform of economy, the degree established by the foreman's managerial ability, so it provided an excellent vehicle to convey the program right into the foreman's own realm. More important than that, the results of economy are immediate, and easily measured on the cost sheet, thus providing an excellent barometer of progress.

A well organized economy program was selected which groups all efforts toward conservation under six headings:

1. Labor	Time Poor Workmanship Labor Turnover The Cost Sheet
2. Material and Supplies	General Mill Materials and, Supplies Repair Materials and Supplies Materials in Process The Cost Sheet
3. Machinery and Equipment	Improper Operation Inadequate Maintenance Misuse—Power and Maintenance of Small Equipment The Cost Sheet
4. Accidents and Illness	Illness Accidents Causing Personal Injury Accidents in which no Personal Injury is Sustained The Cost Sheet
5. Electricity, Water, Compressed Air, Gas, Oil, Coal (Auxiliary Services)	Elec. Current and Steam Compressed Air and Water Coal, Gas, Fuel Oil, and Heat The Cost Sheet

6.	Space	Cleanliness and Orderliness Space Occupied by Product Space Occupied by Machinery The Cost Sheet

A month is spent studying the conservation of each of the major headings, a week being devoted to each of its contributing causes. The last week is always used to determine the cost of that particular form of waste and to become acquainted with the possibilities for savings. Outlines of a general character are prepared to guide the trend of study.

Again I must refer to that policy relating to the Works Manager's responsibility for training men. He succeeds or fails in accordance with his ability to disseminate usable information to the working forces under his control. The operation of the program pivots on this policy.

The initial presentation of each subject is alike. Each month the Works Manager calls together the supervisory forces and advisory committeemen under his control. There the blanket outline of the month's subject is briefly described and pertinent facts presented relating to that particular brand of economy.

At these general meetings no attempt is made to analyze or discuss job technique. That begins with the next step when the general superintendent calls together his department superintendents. These men break down the outline into departmental problems and discuss corrective measures. Such meetings are always supplemented by a review of the previous week's accomplishments.

Next, the department superintendents go into action, with a meeting of their foreman-managers. There the weekly program is localized to fit departmental functions and the actual application of the principles of conservation is begun.

The final operation, and the one which receives the greatest attention is the foreman-manager's application of the information he has received, to the job. In other words, he studies tonight, for many of the meetings are held in mill offices after hours, and applies tomorrow. But if he fails to apply his information, then it is a matter for the superintendent to settle.

Since the foreman-manager holds the same relationship to his men as the superintendent to him, they conduct similar meetings with their own men. It isn't possible to train foremen alone. Their information is bound to emanate to the men so an outlet of this character was provided called "job training." It deals specifically with job technique, and will be described later.

In all meetings, the conclusive cost sheet is produced to determine whether the accomplishments are real or imaginary.

When the program first swung into action things began to happen at a lively pace. Labor was the first subject scheduled. This is the least tangible

subject on the program. Because it deals with people, and no one relishes the task of doing anything which might cause some one to be denied work, it presents a delicate problem which can only be handled by a frank presentation, one manager to another. Sound economic truths were presented to bridge this difficulty. The men were told that anything which strengthens the company's position in the industry added permanence and value to the individual's job. The necessity for properly trained understudies and their importance to the company during a period of expansion was also emphasized.

The ready acceptance by the working organization was salient proof that this was the kind of program they wanted. Foreman-managers in every department have enthusiastically expressed their appreciation of it. It brought understanding of purpose, definition of job effort, and greatly increased departmental coordination, or in other words a merger of purpose and a unison of action.

Although the foreman appeared in the dual role of student and instructor, it afforded the "painless" opportunity to brush up their own information and prove the value of training, to their own unbiased satisfaction. As the program gained momentum the calls upon the service departments—cost, betterment, engineering, and personal service—increased. These departments were revealed to the supervisors as another tool maintained by the company for their particular benefit, whose frequent use would improve the service of their own organization. The functions of all service departments were carefully explained by the men in charge in numerous meetings. Whenever it was possible references were made as to how the manager of a business would proceed. No capable manager would think of conducting a business or changing an existing custom without competent advice from specialists. With the help of advice from experts he would carefully weigh each situation and then come to a definite decision. Even in departments where the voluntary solicitation of counsel was previously unknown, superintendents and foremen alike soon realized the wisdom of using every available instrument to improve their service. The most skeptical saw that they must consult experts to keep pace with the progressives. It was a logical conclusion.

The results of human activities always fall into two classifications—the tangibles and the intangibles. The one is evaluated in dollars and cents while the other's true worth is merely an opinionative estimation, and not always indicative of the real value. Usually the intangibles outweigh the tangibles, but they are sometimes poor witnesses when placed on the stand. The foreman-manager training program grew the usual crop of intangibles, many of which bear a fruit flavored with dollars and cents, if our opinion is at all reliable. But the tangibles with their unmistakable mint marks have been far more numerous than our greatest expectations.

Take, for example, the matter of accidents. During the first four months

of 1929 there were 92 accidents in all Armco plants and the frequency rate was 9.20. In the corresponding period of 1930, lost-time accidents dropped to 29 for all plants, at a frequency rate of 3.92. The Middletown Works, one of our major plants, has had but 3 accidents. Of the four months gone by, two have been accident free. This plant at one time established a record of 69 days during which 1,458,000 manhours were worked.

Relatively unimportant events sometimes set the stage for progress. During the month devoted to studying the economical use of materials and supplies, it was found that a ridiculously large quantity of lubricants and canvas gloves had been used during the year; in another plant stationery and forms had cost $44,000. It was clear to everybody that these materials had been wasted. Though the cost of these items is rather insignificant in the reduction of a steel plant's yearly expenditures, yet these ready-made illustrations provided dramatic evidence of waste, and brought about the voluntary agreement to budget supplies, which is doing its full share of cost reduction.

Armco's major producing departments are now employing a well-known plan which invigorates production. Each department is charged a fixed price for every ton of product as it comes down the line. They are likewise credited for each ton they pass on to the next operation, plus the value they have added to the product. If they are efficient, they can show a profit. If not, they realize that it will require some lusty scratching to keep pace with the other groups. This, of course, is directed toward the engraving of the primary responsibilities in the minds of the supervisors. Financial management is so important that we have endeavored throughout the entire program to make available the facts and figures relative to operations, equipment, supplies, and services.

Departmental economies can always be promoted by training. Leakages generally are of two types, visible and hidden. Because the supervisor knows and sees the visible leaks he usually does a good job of controlling, but those hidden leaks which he passes by in his daily work are the costly kind. More than likely he alone is responsible for their existence.

In these days of dazzling revolutionary development, it is often astounding what can be accomplished by the brief review of fundamentals. There is a stopping point in foreman-manager training where the supervisor makes a quick change from the role of student to that of instructor. With the best-trained supervisors in the universe no satisfactory accomplishments could be attained without the willing, intelligent cooperative effort of the workers. If the organization's policies are fair and sound, men are willing enough to cooperate to the extent of their native intelligence. Any higher level is attainable only by concentrated, directed training, and tendering of helpful, pertinent information relative to their occupation.

"Job Training," as we term it, consists of bringing all the men engaged on some typical steel plant job together. There the production foreman-manager explains the technique of good workmanship, and the maintenance foreman-manager reviews the factors of mechanical upkeep. The safety and training advisor then appears, and explains the hazards of the job, as well as their avoidance. Small models or plans are used whenever possible for purposes of vizualization.

You may wonder "why the maintenance man?" Foreman-manager training has shifted and placed the burden of responsibility for proper maintenance, and in our plants it now rests with the operator. He is responsible to see that the equipment he operates is properly maintained.

"Job Training" classes cover roller leveling, crane following, rigging, rolling, open hearth furnace operation, gas making, welding, crane operating, sheet inspection, galvanizing, furnace operation and control, shearing, pickling, and every typical job within a steel plant's domain. Its scope will be enlarged soon to include many scattered minor operations common to several departments, of which the use and maintenance of the emery grinder is a good example.

Teaching, training, showing how, when, where, and why to do a thing, and then seeing that it is done is the responsibility of management. It is trite to say that the most successful foreman is he who operates his department with the brain and not the leg. The foreman who needs to be at the operators' elbows most of the time, necessarily must spread himself out rather thinly. His time is too completely occupied by detail, to give proper consideration to planning, to management of all the encompassing functions of his job. He can simply touch on a single segment. A properly trained personnel not only functions more economically, but leaves the foreman free to plan other economies.

All the time you have probably been wondering "what about leadership?" In our plants the best leaders are those who possess a thorough balanced knowledge of their jobs. A machinist skilled in trade knowledge might not be successful as a foreman because his information was not complete. When it came to the economic administration of labor he might prove a terrible misfit. But add to his adequate trade knowledge the qualities which would make of him a manager, and you have also made a leader. Some foremen are misfits, too. It is curious how men like to work for those of superior information. If there is a single phase in which the foreman is deficient, they soon ferret it out, and that leader's effectiveness suffers with his own crew. Confidence is the cornerstone of leadership, confidence born of successfull all-round performance. Leadership is its inevitable by-product.

To build leaders, we believe it is necessary to build successful performers. Since that is what our program was designed to accomplish, it is rea-

sonable to assume that by the cultivation of the foreman's several functions, it is entrenching him in the esteem of his men.

Job training as it has been applied at Armco also performs another duty. In common with many other industries, we endeavor to keep the aged employed just as long as possible. When his physical condition becomes such that he cannot continue on the job he knows best it becomes necessary to substitute a less difficult occupation. Quite often the sudden change and the necessity for learning the new job is a shock to him. Then, it is, that job training proves its value by helping to lengthen his period of usefulness. The job is taken apart before his eyes, and each part carefully explained. With the mystery gone, it seems no more complicated than the old position. With his years of experience, there is not reason why the average aged employee should not be able to serve his employer profitably and well after he understands the new job, provided he has been intelligently placed. Sometimes he requires a little more patience than the younger man, but in the end he is normally able to apply his information with greater effectiveness.

Armco's foreman-manager training program deals with basic fundamentals. It provides organization with the impetus for accomplishment. It is not standardized. It wanders into every nook and cranny of the organization, adapting itself to the solution of local problems. One thousand Armco foreman-managers in five plants in four states are engaged in this synchronized search for economies to strengthen their company's position in the industry, and add permanence and value to their respective positions.

The Selection, Assignment and Training of Workers *

By HENRY S. DENNISON, *President and* JOHN S. KEIR, *Economist.*
Dennison Manufacturing Company

IT IS to be assumed for the purpose of this paper that an adequate supply of labor is available. The sources of such a supply need, therefore, be touched upon only in passing. Sources of supply divide into two general classes: (1) those external to the organization; (2) those within the organization. The external sources are:

1. The people who call at the employment office of their own initiative. The quality of the supply available from this source varies, of course, with the general employment situation.

2. Those who call in reply to advertisements. The use of this source

* Presented at the Fourth International Congress on Scientific Management, Paris, 1929.

and the quality of the applicants therefrom, also varies with the general employment situation.

3. Those who are sent in by employment agencies. It has been said of private employment agencies that they only are in touch with the floaters and the unskilled. Government employment agencies—city, state, and Federal—are preserved to cover all classes of skill. This is too controversial for debate here, only to say that like the sources already mentioned, whether this source of supply is used at all or not is one index of general employment conditions.

4. Former employees recalled. Most companies with centralized personnel records usually keep a file of desirable employees who have shifted to other companies or occupations. Upon occasion company may recall such employees if possible. There are, of course, sometimes ethical questions involved in this procedure. Many times there are not; and any company which can call upon a marginal force of such employees is fortunate indeed.

Internally a major source is the recommendation of friends and relatives. This establishes a selective process at once, because the individual within the plant usually has no illusions either about the plant as a place to work or the jobs to be done. This constitutes one answer to the charge that mass production is generally deadening to the individual. It is to those only to whom it is, and apparently there are many people to whom it is not. The automobile factories in Detroit, for example, offer objective evidence of this kind of selection which is going on through the recommendation of people within the plant of their friends and relatives for jobs in these same plants. Some plants make it a practice to post all vacancies on the bulletin boards, or through other mediums of publicity. This helps to tap latent abilities already existing within the organization and stimulates the recommending of outside individuals by persons within the organization.

Selection and Assignment

Selection and assignment of individuals for given positions must be considered under (1) original selection and assignment and (2) selection and reassignment. For the purposes of this paper, it is being assumed that a personnel department is available.

1. Original Selection and Assignment. The actual selection of an applicant for a given job is a compound of the opinion of a trained interviewer supplemented by physical examination and appropriate psychological testing. Throughout, such records are used as fit the needs of individual companies.

The basis of selection is a requisition from the operating departments and the description of job to be filled, and the desired qualifications for it. The applicant for a position usually fills out an application blank. These blanks vary as the job is skilled, unskilled, or clerical. The application blank is supplemented by the questions of a trained interviewer. The interviewer

cannot rely on the job specifications alone. He must be familiar with the actual job itself. In the actual interviewing all care must be taken to avoid any appearance of cross examination. If the interviewer feels that the applicant warrants consideration, and if the applicant is interested in the job and in working for the company, the interviewer may supplement his interview both by psychological tests and by physical examination at the medical clinic.

In both cases care should be taken to explain to the applicant the purpose of the procedure. Neither one is used to keep the applicant from getting a job. They are of mutual benefit to the company and to the prospective employee.

Physical examinations as a part of the selective process are being widely accepted.

Psychological testing is not so widely used nor so generally accepted. The tests which are in use fall into six general classes:

1. Tests of clerical aptitude and intelligence.
2. Tests of specialized office skills.
3. Performance tests for factory girls.
4. Performance tests for factory men and boys.
5. Tests of specialized trade knowledge, such as machinists, electricians, etc.
6. Tests of personality make-up, social intelligence, and vocational interest.

Mr. Johnson O'Connor of the General Electric Company has had perhaps the widest experience with such tests in this country. Much publicity has been given to the testing of taxi cab drivers, and recently to tests by the Boston Elevated Railway in getting at the causes of accidents.

At the Dennison Manufacturing Company every effort has been made to avoid making of the tests an automatic, machine-like process. All the testing is on an individual basis and the regular series of tests is supplemented at any time by special tests that throw light on an individual case. Furthermore, in the process of giving tests there is a unique opportunity to watch the applicant at work, to note his reactions and the obstacles he encounters. All of these things may be noted on the test record card. They afford opportunity—when talked over with the Employment Department interviewer—to get two angles on an applicant, and should help to give a picture of his abilities, personality, temperament, and attitude that comes closer to the truth than any single approach.

There is not, of course, perfect agreement between test scores and success on the job. Correlation is sufficiently high, however, to justify their use as a supplementary selecting device. At the Dennison Company the highest degree of success has been made with clerical applicants. On one series of tests 90 per cent of the high score girls turned out to be satisfactory clerks,

and of this 90 per cent over a third were out of the ordinary. Of those who made low scores, less than half turned out to be satisfactory clerks and none of the low score group have been in the out of the ordinary class.

With the clerical group alone, through the use of tests, there has been an estimated potential saving of $50,000. The extent to which this saving will actually materialize as years go on depends upon the skill of management in utilizing the abilities of high test people in ingenious combinations, and in connection with a steady flow of work, adequate standards and incentives.

Re-assignments may be temporary or permanent. Temporary re-assignments may be made to prevent unemployment, or they may be due to an effort to meet a peak load or some unusual condition. Transfers thus made are to jobs requiring about the same sort of skill as on the individual's regular job, or to those which require practically no skill. The only problem as regards selection for particular transfers of this sort is to make sure that the individual is physically fitted to do the work required. In many cases the approval of the clinic physician is required before the transfer is allowed to go through.

Permanent re-assignment may initiate either with the management or with the individual employee. There are cases where the management shifts employees from one job to another for purely management ends. Here, also, the physician's approval may be the deciding factor in any individual case.

Individual employees sometimes feel that they are improprely placed and that they can get much better results in some other kind of work than that on which they are working. In cases of this kind, psychological tests are a desirable supplement to interview with the representative of the personnel department.

In all assignment and re-assignment, adequate records are a very necessary part of the technique. Some of these records are kept in the central personnel department, and some are kept in the office of the operating division.

It is occasionally desirable to check one's own selection and placement technique against general practice. To this end, sending members of the Personnel staff, and sometimes an operating executive, out to hunt for jobs has proven very illuminating. Within a given plant, it has also proven of high educational value to have operating executives and employees occasionally assigned to the Personnel Department to interview applicants for positions.

Training and Education

The discussion of employee training will deal almost entirely with Dennison practice. A recent book, "Organized Training in Business",[1] by James H. Greene gives an excellent general picture of American practice. A further study of this same problem is now going forward at Harvard University.

[1] Harper and Brothers. 1928.

The Dennison educational and training effort is based on the fundamental that employee development is the responsibility of the line executive. But it is equally fundamental that the line executive shall have at his disposal the services of a functional specialist in the training and educational field. Both of these fundamentals are part of Dennison practice.

The program of education and training breaks into two parts: (1) that which is aimed at giving specific instruction for given jobs up to managerial grade: (2) that which is aimed at a general development which will lead ultimately to having more and better equipped individuals for the various positions in the management scale. The first of these divisions we shall call training, and the second education;—it being understood that these terms are being used entirely arbitrarily.

Training Program

1. **Factory and Clerical Operatives.** All training of factory and clerical operatives is done in the producing department, by supervisors and in accordance with a definitely organized plan. It should be repeated that the administration of the training program is under the supervision of the line executives, but the program as a whole is supervised by a staff specialist called the Training Foreman. He assists the individual line foreman in the training work, but he reports directly to the Personnel Manager.

The other general factors in the plan are:

a. More careful selection has led to the providing of better potential operatives.
b. Full time instructors are provided where necessary.
c. A definite procedure is established for the proper selection of work for people being trained.
d. A standard of progress is set up, based upon the actual performance of ten or twelve individuals formerly trained on the same class of work.
e. New operators, wherever possible, are put on a combination of guaranteed base, and incentive plan of wage payment.

The actual procedure for any particular piece of training is as follows:

a. The person who is to instruct on the job first analyzes it in detail.
b. With the help of the Training Foreman a program is laid out.
c. On all production jobs, Standard Method and Standard Practice sheets are available covering detailed operation. These sheets form the basis of operating standards. The instructor uses them to teach the detail method and motions of doing the work.
d. A progress chart is kept showing the performance of each person under training.

Training may involve three days or three years. A sample of a very

simple training program (trucker) is shown in Figure 1. A progress chart is also shown in Figure 2.

Office workers are trained by essentially the same procedure as just outlined. With a few special jobs however, such as order writers and correspondents, a certain amount of time is scheduled in various parts of the factory in order to acquaint the trainee with essential factory operations.

It is hard to measure the exact advantage of this organized training over the former methods used as no costs that afford a basis of comparison were kept under the old methods. On many jobs, however, it has been possible to qualify apprentices in a year or a year and a half instead of the four or five years formerly required. In one class of work it has been possible to

INSTRUCTION SHEET

TRUCKING HEAVY LIFTING

Name_____ Date Hired_____
or
Dept._____ Transferred_____

Job_____

Kinds of Trucks	
Lift	
Stevedore (No. 2 or No. 3)	
Flat	
Kendall	
Bin	
How to Care for and Grease	
How to Load	
How to Lift and Balance	
How to Truck the Load	
How to Use a Hook	
How to Handle an Arbor	
How to Use a Block and Falls	

Remarks:

Items checked have been taught this man and I consider him qualified.

Signed. . . . . Instr.

SAFETY

Do not lift too heavy a load without help.

Do not push a truck. Pull a truck behind you.

Do not run around corners. Someone may get run into.

Do not leave a truck in an aisle lying down. Stand a truck up so people will not fall over it.

Carry a hook in a safe way as you have been taught.

Watch out for your fingers and other people's when shutting a car door.

Go to the Clinic with any injury no matter how slight.

DON'T TAKE CHANCES

I have read the above rules carefully and have had them explained to me.

I understand them and will do my best to live up to them.

Signed. . . . . Employe

FIG. 1. SAMPLE OF A SIMPLE TRAINING PROGRAM

get new employees up to regular standards in a period of six weeks instead of the sixteen weeks previously necessary; in addition, individuals have been able to earn 20 per cent more in wages after the first month on the job than was ever possible formerly.

2. Foreman Training. There are two distinct parts to the foreman training plan. The first of these is called preforeman training, and concerns itself with a man before he actually becomes a foreman; the second part is concerned with his development after he becomes a foreman.

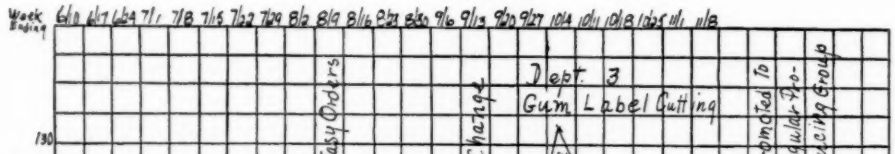

FIG. 2. A SAMPLE PROGRESS CHART

Each factory manager anticipates his probable need for a new foreman well in advance of the actual fact. With whatever staff advice he requires he selects individuals whom he thinks might qualify and are worth the training effort.

The training program covers about six months and all the training is done during working hours. It calls for the individual being trained to spend from one to four weeks in each of the departments with which, were he foreman, he would have the most important contact. Each department has a general outline of work for the trainee while in that department. This outline, however, is reviewed by the Training Foreman and the head of the department involved so that the general program can be made to suit the needs of the individual being trained.

After becoming foremen several different methods of development are used. The general features will be discussed later under Education. Some of the specific methods are:

a. Each executive in charge of a major division of the factory meets

with his foremen weekly. These meetings are largely informational, keeping the foremen up to date on plant information.

b. Foremen are transferred, for a period of time, from one department to another within a major division.

c. Older foremen who have not had preforeman training, are transferred for short periods to staff departments—such as Personnel—to get a different point of view on their own jobs.

d. Foremen make trips to other factories or to meetings of one sort or another in order to get a wider horizon.

e. Foremen make periodic reports in writing to the chief executive of their particular factory division. These periodic round-ups serve the useful purpose of looking at the whole job at frequent intervals.

3. Salesmen's Training. New salesmen are trained on the job by the manager of the sales district. (The country is divided into thirty sales districts, or zones, with a resident manager for each.) More experienced salesmen attend classes at headquarters at given intervals. The executives of the distribution division traveling into the districts also do a little training and check the results of the training given in the district. A few of the District Managers have proven unusually successful in the training of new men. These districts are then used as a sort of general training ground, many new men being transferred to other districts after the initial training period.

There is a functional head of salesmen's training located at the headquarters of the company. He acts in an advisory capacity, supplying such standard practice and special material as are required. He also lays out the program and the specific course content of the classes held at headquarters.

4. Works Committee Representatives. The company has a works council, serving in an advisory capacity on matters affecting the workers. This council is elected yearly and has a turnover of from one-third to one-half each year. In order to make the council function more effectively a course of training has been set up for new representatives or any experienced representatives who care to take it. The course is in charge of the Chairman of the Works Council, who selects such individuals as he sees fit to carry on sections of the program. The program itself is worked out by the educational and training staff and approved by the Works Council. The program for the current year includes such general subjects as personnel procedures of various kinds, wages, rate setting, quality, health and safety, time study, and works committee procedures. These are developed in such detail as the needs of the group warrant. The course lasts for five weeks, immediately following the yearly elections. There are three meetings per week.[2]

[2] The detail of the actual material covered in the 1928 program is available at Framingham.

Educational Program

It is almost axiomatic that in an organization which has so large a degree of management sharing as the Dennison Manufacturing Company,[3] that a process of continuous education is a prime necessity. It constitutes a two-way obligation. It is necessary on the one hand that individuals shall recognize that the organization has a right to expect that the individual's education shall be continuous; and it makes it mandatory on the company, on the other hand, that adequate facilities shall be provided to make such continuous education feasible.

The specific approach to the problem has been predicated on two assumptions:

1. That continuous education is largely an individual matter.

2. That the desire for such education will permeate into the organization from the top down—which means that effort must be directed to select groups and individuals rather than in an over-all program.

In operation the first move has been to make the program the responsibility of one person, who has been given the title of Educational Advisor. The requirements laid down were:

a. That the Educational Advisor must be willing to spend a great deal of time on each case; consulting not only with the individual but with the individual's immediate superiors, and perhaps others, so that any course or reading suggested represents not a snap judgment but a seasoned opinion.

b. That the Educational Advisor must be a person with the scientific attitude, with personality to meet people and talk frankly without giving offense; with sufficient educational background so that his opinion will be respected, and finally, always, he must have an abiding enthusiasm for the thing he is doing.

c. That the Educational Advisor shall follow up individuals pretty constantly, not with the idea of nagging, but to assure constant forward movement wherever possible.

The company was fortunate in securing for the position as outlined a man holding his doctorate degree and with several years of teaching experience. He has also, in two years, worked himself into a position of general acceptance by the organization.

In actual practice the educational work has not been highly specialized. Immediate superiors and managers have been active in handling the educational problems within their respective sections. The Educational Advisor has endeavored not to lessen but, if anything, to increase the concern of immediate superiors regarding the development of their subordinates. He has

[3] In 1911, the company was reorganized as an industrial partnership. The voting control of the organization is in the hands of about three hundred partners in managerial positions. The manual workers, through the Works Council, also have a voice in managing.

tried to provide immediate superiors, upon their request, with additional resources in their handling of those problems.

Fundamental judgments in connection therewith, which the immediate superior has continued to make, are concerned with:

1. The probable development of his section, changes in jobs therein, and the occurrence of vacancies;

2. The abilities and potentialities of the leading employees in his group;

3. The technical and sometimes the non-technical educational opportunities which would be of advantage to each person of promise working for him;

4. The educational opportunities which can be arranged within his section;

5. The merit of progress shown by each learner;

6. Incentives to personal development to be offered to leading employees in his section.

To be sure, the respective line executives differ in their approach to these problems. From these differences we probably will build an improved ability to handle educational problems.

At least annually, immediate superiors, in personal conversations, invite their subordinates of promise to outline plans for personal development and to specify the educational opportunities which they, as individuals, wish this company to put before them. The views of each person who responds are discussed with him by his immediate superior and, at a later date, by the Educational Advisor. These conversations clarify the purposes of each person concerned; they indicate, also, the arrangements which logically can be expected to yield continuing advantages to the individual and to the company so long as it employs him.

The specific duties of the Educational Advisor have after a two-year period crystalized as follows:

1. Learn of the abilities required on the part of people at work in the several branches of the business, and, upon request, participate in planning educational disciplines to develop those abilities.

2. Know the persons of outstanding ability in each branch of the business, and endeavor, jointly with immediate superiors, to promote their progress.

3. Arrange after-hour courses, and obtain instructors therefor. Advise with instructors regarding aims and methods of instruction.

4. Obtain teaching materials and handle administrative work in connection with study groups.

5. Study training and educational efforts with a view to improvement.

6. Maintain records of educational work done by individuals.

7. Supervise the library.

8. Carry a definite amount of teaching and tutorial work.

A Rating Scale for Discussion Conferences

By CHARLES C. STECH, *Employment Manager, Lord & Taylor*

IN ORDER best to understand the straight-line rating scale which is the subject of this article, it is necessary to know something about the circumstances under which the scale was developed and used by the writer. It was devised in connection with a training program carried on during the years 1925 to 1927 in five well-known public utilties in and about Chicago. The objective of the program was to bring about an improvement in public relations, sales, and executive leadership.

An important feature of the program was the holding of group discussion conferences for the development of job standard practice. The work in each of the companies was carried on by conference leaders and their assistants under my direction and supervision. In the conduct of each group discussion conference, it was the plan usually to progress through four stages, as follows:

First, the leader as adroitly as possible guided the discussion to the induction of sound principles for job practice.

Next, a dramatization was presented which embodied these principles, or illustrated the violation of such principles, or both. The dramatization usually represented an actual employee-customer contact as previously reported by a service shopper.

Then, the various points illustrated by the dramatization were discussed by the group and methods were agreed upon as suitable for job standard practice.

Finally, in as spontaneous a manner as possible, an assignment was worked out with the group of things for them to do on the job which would require them to put into practice the methods upon which they had just agreed.

It was the habit of the director to visit the discussion conferences and at the conclusion of each to talk over with the conference leader and to analyze the pedagogical value of various methods he had used. It was to aid in such analysis that the director devised the rating scale.

During the group discussion conferences, the director would make notes of the items he wanted to talk over with the conference leader. At the end of the conference he would make the ratings after the manner described in the scale. These ratings (hereinafter called "absolute ratings") were never shown to the leader on account of the resistance which results under such circumstances. (The limits of this paper will not permit elucidation of this

highly important psychological problem of "resistance"). Instead, the director made a separate list of the ten items of the scale and marked with an A the two items which he had rated highest, with a B the two items which he had rated next highest, and so on until he had marked with an E the two items he had rated the lowest.

The conference leader was asked to take a copy of the scale and rate the conference and then to make a list of the ten items of the scale with the comparative ratings A, B, C, D, and E. The director and the leader then exhibited to each other the lists of comparative ratings, noting wherein they differed or agreed. As a result of the conversation which resulted, the conference leader would decide upon changes in his methods for use in his next group discussion conference.

A file was kept of all scales rated by the director and he was able to trace the improvement of each conference leader with respect to each item of the scale. For purposes of convenience he transmitted the "absolute ratings" into numerical terms with a maximum of 10 for each item.

The scale as it was used proved to be invaluable in aiding the conference leader to center his attention upon the essentials of effective conference-leading and to analyze and improve the methods he used. It is not at all unlikely that supervisors of teaching in many fields would find such an instrument to be of decided value.

Conference Rating Scale

Conference Leader .....Date .....

Company .....Group .....

Number in Group .....Topic .....

How to rate: Consider first MOTIVATION. If the description under the right end applies completely, make a check mark on the extreme right end of the line. If the description under the left end of the line applies completely, make a check mark on the extreme left end of the line. If the value of the MOTIVATION was half way between the two descriptions, make the check mark on the midpoint of the line. Make the check mark at any point on the line, bearing in mind that the better the MOTIVATION the farther to the right the check mark should be placed, and *vice versa.*

Then go on and rate the other nine elements.
The blank spaces are for making notes during the conference.
The ratings should be made after the close of the conference.

1. MOTIVATION. Conducting the conference so as to appeal to the interests and felt needs of the group members. (1) **Strength.** Did he appeal to strong motives or weak ones? (2) **Height.** Did he appeal to the highest practicable motives or to the low ones? (3) **Constancy.** Did he try to motivate at all times when it was needed? (4) **Subtlety.** Was the motivation subtle or was it too obvious to the group members?

Appeals only to low motives in a crude uneffective manner or makes no appeal.			Appeals strongly to highest practicable motives whenever necessary and in a subtle manner.

2. PROBLEM ATMOSPHERE: (1) **Leader's Opinion.** Did the leader succeed in keeping the group from knowing what his opinions were? (2) **Importance.** Were the problems raised by the leader serious or trivial? (3) **Earnestness.** Did the group attack the problems earnestly? Did they linger after the conference to discuss their problems further? (4) **Experience.** To what extent did the group members call upon their experiences in their attempts to solve the problems?

Lets them know his own opinions. Does not make it necessary for them to think.			Gets them to try earnestly to solve problems for themselves, calling freely upon their experience to do so.

3. GROUP DISCUSSION: (1) **Amount.** How much of the talking was done by the group? (2) **Distribution.** Did all group members take part or did a few do all the talking? (3) **Spontaneity.** Did the group members discuss the problems voluntarily and with enthusiastic interest? (4) **Importance.** Was the group discussion upon serious or trivial matters?

Leader does most of the talking. Group members talk when called upon and then but little.			All voluntarily take part in discussion of serious matters. Leader talks no more than necessary.

4. APPLICATION: (1) **Presence.** Were the principles or methods agreed upon, actually applied? (2) **Job.** To the concrete problems of the job? (3) **Practicality.** In a practical way? (4) **Thoroughness.** So thoroughly as to give the group members a complete grasp of the principle or method?

Makes no attempt to apply principles or methods to concrete job problems.			Causes group members to apply principles or methods to concrete job problems so effectively as to thoroughly understand them.

5. RESULTS AND CONCLUSIONS: (1) **Definiteness.** Did the conference discussion result in definite conclusions? (2) **Value.** Were they of actual value? (3) **Felt Accomplishment.** Did the group members feel that they had accomplished valuable results? Did they say so? (4) **Standard Practice.** Could the conclusions be adopted as Standard Practice and be understood by persons who had not been in the conference?

No definite conclusions arrived at.				Arrived at definite conclusions of real value for Standard Practice and group members realized the value.

6. ASSIGNMENT: (1) **Presence.** Were the group members given an assignment? (2) **Clarity.** Did they thoroughly understand the assignment? Did they learn exactly how to do it? (3) **Manner—Tact.** Was the assignment "sold" to the group? Did they seem enthusiastic about it? (4) **Carry-over.** Would the assignment get carry-over to the job? Would it cause the group members to apply on the job what they had discussed and learned in the conference?

No assignment was made; or if made, was impossible to understand or to carry out.				Group members were thoroughly sold on an assignment which was very specific and clear and which would get practical carry-over to the job

7. QUESTIONS: (1) **Thought.** Did the leader use thought-compelling questions and in such a manner as to keep his own opinions concealed? Did he use leading questions sparingly (if at all) and then only to make sure of a member's meaning? (2) **Specificness.** Were the questions vague and general, or were they so specific that all group members would interpret them alike? (3) **Practicality.** Did the principal questions relate to the job and in a practical way? (4) **Sequence.** Did the questions follow naturally and logically what had gone before?

Very vague or leading with no direct bearing on the job and presented in an incoherent order.				Used specific thought-compelling questions whenever possible with practical bearing upon job and in a natural sequence.

8. ATTITUDE OF LEADER: (1) **Personality.** Was the leader cordial? Did he radiate an atmosphere of contentment and happiness? (2) **Listening.** Did he listen attentively to the contributions of the group members? (3) **Consideration.** Did he consider their contributions carefully? (4) **Credit.** Did he see to it that good contributions received proper credit?

:Cold manner. Closed mind Showed no interest in contributions of group members.	:	:	:	:Was cordial, inducing a good spirit. Listened to and considered carefully all contributions giving proper credit. :

9. ECONOMY OF TIME: (1) **Start.** Did the conference start on time? (2) **Tardiness.** Did any group members come tardy? (3) **Proportion.** Were the respective amounts of time spent on various topics well-proportioned? (4) **Waste.** Was any time wasted on trivial matters?

:Started late. Some members tardy. Time poorly proportioned and much wasted on trivial matters.	:	:	:	:Prompt start. All members on time. Time well-proportioned. No time wasted. :

10. CONFERENCE MANAGEMENT: (1) **Supplies.** Were the proper supplies on hand and ready for use? (2) **Furniture.** Was the furniture adequate and properly arranged? (3) **Mechanics.** Were the mechanics of the conference operated smoothly, such as seating the members, looking after the attendance record, and issuing supplies? (4) **Physical.** Were the light, heat, and ventilation attended to properly?

:Necessary supplies not ready for use. Mechanics handled inefficiently. Furniture inadequate and poorly arranged. Otherwise uncomfortable.	:	:	:	:Supplies ready for use. Mechanics moved smoothly. Furniture adequate and well arranged. Otherwise comfortable. :

FURTHER COMMENTS

Rater .....

Industrial Training[4]

By Byron F. Field, *Superintendent, Training Division, Commonwealth Edison Company*

IN ORDER to secure a background of information regarding the extent of industrial training now being carried on, a questionnaire on the subject was sent to 700 industrial concerns between November 27 and 30, 1929.

The letter accompanying the questionnaire pointed out that this particular study was quantitative, and was to precede a more detailed qualitative study on some one particular phase of industrial training. Almost 50 per cent of those receiving questionnaires sent replies which is a very fine showing. A total of 326 replies were received up to January 14, 1930. In addition to formally answering the questionnaire, fully half of the correspondents sent letters evidencing their personal interest in the work of the Group.

1. Management Training

In answer to the question "Does your company carry on formal managerial training (i.e., are present executives more than one step removed from the "rank and file" employees, given formal training to improve their ability as executives)?," 70 companies answered "yes." Of this number, 57 companies carry on this training as a formal course. Five other companies, although stating they had no formal managerial training, do carry on certain courses, ranging from weekly meetings of department heads for the discussion of current managerial problems, including training; the discussion of material presented in various text books; lectures; and courses presented by an outside concern; to individual programs planned for separate groups.

Fifteen other companies stated that while they carried on no formal managerial training, they trained their sub-executives by such other means as weekly meetings, understudy methods, permission to executives to visit any discussion or conference group which may be in progress, visits to management conferences for interchange of ideas, through talks given by various executives, and rotation assignment to various departments.

Answering the question as to who conducts the managerial training course, 36 companies have line executives doing so. Six other companies in which the course is carried on by someone other than a line executive, nevertheless call upon executives to present talks, lead meetings, and act as coaches to understudies assigned to them. A slightly smaller number, 32 companies, employ a staff specialist to conduct the managerial training program. Another company stated that the course is conducted in part by sales and mechanical engineers and in part by a specialist.

The scope of the work and the responsibility for the execution of men

[4] Report on questionnaire issued by the Industrial Training Group of the A. M. A. Presented at the meeting of the group held in Cleveland, January 30, 1930.

holding the title of Director of Training or a similar title, differ considerably. In some cases, the position is considered a line position; in other cases, staff.

The source of the management training material varies considerably. In 32 companies, the material is prepared by a company specialist. In two others, it is prepared at "headquarters" where the work is probably also being done by a specialist. Twenty-four companies have their material prepared by an outside organization, while six use such outside material to some extent. In 43 companies, the material is prepared in co-operation between the management and the company staff specialist or a specialist from an outside organization. This would indicate that in two-thirds of the cases, management takes a more or less active part in the preparation of the material for the training of future executives.

A feature of executive training is frequently a rotation assignment to various company departments. Thirty-six companies employ this method. Three others stated that while they have no regular routine, they make assignments in special cases where desired. One of these companies rotates the department heads to various other departments.

2. Supervisory and Foreman Training

The second major topic in the questionnaire concerns what is popularly known as supervisory or foreman training. One hundred and twenty-nine companies stated that they do "carry on systematic supervisory or foreman training of the men immediately in charge of the 'rank and file'." Six other companies said that while they do not systematically train, they hold informal meetings at which various problems are discussed. It seems probable that this last practice is general in all companies in which formal meetings are not held for this purpose. Two other companies have a course carried on periodically by the Extension Divisions of universities. Two other companies have their foremen attend the Community Foremen's Club. One company reported the abandonment of the supervisory training course because of dissatisfaction with the results. Another company uses only the understudy method of training its supervisors.

In 86 companies, the supervisory training meetings are conducted by the foreman's superior. In three other companies, one of the foremen is elected to lead the meetings. In 53 companies, foremen's meetings are conducted by a staff man other than the foremen's superior. In two companies, the leader is the Employment Manager; one employs a trained conference leader, and four employ university specialists. Some companies use a combination in which the foremen's superiors lead some of the meetings and staff specialists lead others. However, considerably more than a majority leave the responsibility for leading the meetings up to the foremen's superior.

The natural corollary is that a proportional number, or 70 companies,

have the training material prepared within the department which is to use it; while 42 have the material prepared by a company training specialist. In some cases, the material is prepared jointly between the department and the staff specialist. In 43 companies, the training material is prepared by an outside organization. Five companies use an outside organization lecture course, and one company retains, as a staff specialist, a consultant connected with an outside agency.

In six companies, written material is distributed in lieu of meetings. In 39 companies, meetings are held and written material is also distributed. In 84 companies, meetings are held but written material is not utilized.

3. Job Training

Answering the question "Does your company carry on systematic job training?," 113 companies replied "yes." In stating where this training is conducted, 84 companies replied that it is done entirely on the job; seven reported that it is conducted only at a special place, and 25 conduct the work partially on the job and partially at a special place. Where the work is carried on in a special place, it varies from a room in a hotel to a special classroom or department in the plant or business location.

In 15 companies, job training is stated to occupy the employee's full time during the training period. In three of those, overtime is also added. In six, the work is carried on in the evening, while in three, training courses of from one to two hours of special work per week are conducted.

Fifty-nine companies have instructors other than the employee's foreman or department head to conduct the job training. Three of these companies use the services of both. In 39 companies, full-time instructors are employed to do this training. Ninety-eight companies reported that their job training is carried on by either foremen, line executives or other line employees. Of these 98, 37 use a combination of the three; 31 use the foremen alone; eight, line executives only; and six, line employees only. Six use foremen and line employees; eight, foremen and line executives; and two, line executives and line employees. Other companies reported that this is carried on by others, such as the Technical Director, the Production Analysis Department, special teachers, Methods and Times Department, time-study men from the Efficiency Department, and special training supervisors under the supervision of line executives.

4. Apprentice Training

One hundred and sixty-seven companies stated that they are carrying on apprentice training. One hundred and sixty-three companies conduct this training on the job, of which 53 companies use a combined schoolroom and on-the-job program. The special location or school varies from public continuation and trade schools to special apprentice departments and training

rooms located at the place of employment. In two companies, while the training takes place on the job, some supplementary training is given in school. Only three companies carry on their apprentice training entirely in the the school with no parallel training on the job.

Fifty companies have full-time instructors employed in connection with their apprentice training courses. In 148 companies, the training is carried on either altogether or in part by foremen and other line employees. Forty-nine of these companies have the training carried on by foremen only—some co-operating with the instructors in the apprentice schools.

Perhaps the phrasing of one of the questions is a little unfortunate: it reads, "Does your company train apprentices by the 'pick-up' method?" Of course, what the Committee had in mind was the system, so generally used, of placing a new employee on the job with extremely brief instructions after which he is expected to pick up the necessary information for carrying on the work. A number of answers to the question indicate a lack of understanding of what the term "pick-up method" means. However, 51 companies said that they train their apprentices in this way.

One hundred and eighteen companies, or about three-quarters of those reporting the use of the apprentice method, schedule the training as to assignment period. Eight others stated that the period differs, depending upon the job; 14 companies stated that they have no definite assignment period; three, that it varies; while five stated that it depends upon the ability of the apprentice.

The length of the assignment period varies from one week to seven years, the largest numbers being: 16 companies with a three-year period; 16, three to four-year period, and 36 companies with a four-year period.

One hundred and one companies stated that related technical instruction is given together with the apprentice training. This is carried on in co-operation with public continuation and trade schools, and also in schools directly under the jurisdiction of the plant at which the apprentice training is being conducted.

5. Company-Supported Educational Courses

The question "Does your company maintain, as an educational adjunct, an industrial school or night classes in which your employees may receive supplementary education?," received 55 affirmative answers. In 20 companies, evening classes provide instruction in various school subjects. Seventeen companies provide instruction through various agencies in subjects directly related to the work of the employees. Three companies provide for evening classes combined with correspondence courses, while four companies stated that evening classes are maintained in any subject provided sufficient employees enroll for the course. Three companies maintain evening classes in

English only; two maintain day and evening courses; while other individual companies utilize the libraries and educational meetings for industrial education purposes.

6. Co-operation With Outside Educational Institutions

Ninety-five companies stated that they pay a portion of the tuition or expense incidental to the attendance of their employees at outside educational institutions. Another company endows scholarships for graduate work in chemistry and hires those endowed when they have completed their research. Another company reported that it allows its employees time off to attend first-aid and safety courses. Another pays the laboratory and tuition fees for selected college men who base their theses upon some subject directly related to the activities of that company. Eight companies, not included in the 95, stated that they sometimes pay the employees a certain percentage of the tuition cost.

There is a great variety both in the percentage of refund to students and in the performance required to entitle the employee-student to a refund. Fifty-three companies rebate 50 per cent of the tuition or expense of the employee-student. In 15 cases, this is contingent upon satisfactory completion of the course; in 20 cases, no strings are attached, and in the other cases, other restrictions apply.

Three companies provide a 33 1/3 per cent rebate of the tuition, while 28 companies provide for 100 per cent return to the employees. In this group again there are a variety of stipulations as to requirements necessary in order to get this refund. One company gives 100 per cent if the employee attains a certain grade in the course, otherwise, 50 per cent. One company encourages its employees to become students by not only paying 100 per cent of the expenses, but also a 100 per cent bonus if the grades are satisfactory. This is by far the most generous of any institutions reported.

7. Training Executives and Supervisors to Train

Forty-eight companies answered "yes" to the question "Does your company conduct training of executives and supervisors on how to train?"; 10 companies have this training conducted by outside people or organizations, ranging from trade associations to university instructors, State Department of Education representatives, and local school men. Four subsidiaries of a national holding company send their supervisors and executives to its institute for training, which includes this feature. Eleven companies have the training conducted by their Educational and Training Director or persons in similar positions. In seven companies, the training is conducted by an operating official or executive; while in three, the training is conducted by the Personnel Director.

The source of the training material varies considerably. In 11 companies, it is prepared by the Educational and Training Director or a person of similar position; in nine, by an outside organization or university instructor; in two, by vice-presidents; in four, by a committee of Personnel Directors; in three, by a Personnel Director; in three, by various members and officials; and in other companies, by various line executives. Three companies stated that the material is prepared by an outside organization which, in turn, also conducts the program of training executives to train. In 33 companies, the material is prepared by, and the training is conducted by, the same individual or organization within the company.

While, due to the lack of uniformity in nomenclature, it is difficult to determine exactly what a title means in various companies, the following recapitulation is as close as we could arrive: In the rank of the men trained to train in the 48 companies responding, 18 trained men bearing the title of "foreman"; nine, the men bearing the title of "supervisor"; 28, executives of various titles, and 12, personnel men. This of course, involves some duplication.

8. Preference for Concentrated Study

In answer to the question as to which type of training they preferred for the subject of special study during the coming year, the following was the response:

Supervisory or Foreman Training	76
Managerial Training	69
Job Training	25
Apprentice Training	12

139 companies indicated no preference.

Observations on the Report

While it is difficult to make convincing statements regarding the general situation when any questionnaire is subject to varying interpretation, at least certain trends in the industrial training practices in this significant group of industries can be noted.

According to the responses, formal apprentice training is carried on by a larger number of companies (167) than any other kind of training; supervisory or foreman training comes next with 129 companies. This is followed by job training with 113, and management training with 70. There is little correlation between these figures and the type of study which the same companies wish to have made. The largest number of those who expressed a preference, desire further information on supervisory training. This is closely followed by inquiries concerning management training, in which the smallest number of companies say they are carrying on formal work. On the other hand, only 12 companies expressed preference for a study of apprentice train-

ing although it is carried on in the largest number of companies. One conclusion which can be drawn is that current interest in, and emphasis upon, training of the upper strata in industry is being shown.

A significant observation regarding all the types of training is the seeming tendency for the preparation of the material and its presentation to be made by men from within the companies. As indicated before, in management training, the management takes a more or less active part in the preparation of the material for the training of future executives in two-thirds of the cases, and in more than one-half the cases, line executives actually conduct the managerial training course.

In two-thirds of the companies carrying on supervisory training, the meetings are led by the foremen's superior, and in almost as large a number, the training material is prepared within the department which is to use it, sometimes with the assistance of a staff specialist. It is noticeable that the number of companies utilizing written material to supplement the discussion at the meetings is very much smaller in comparison.

In job training, it is noticeable that in most cases this work is done on the job, only a fraction reporting that it is conducted only at a special location. In 85 per cent of the cases, foremen, line executives, and other line employees conduct all or part of the job training, while in 59 of the companies, including some of those in the previous list, instructors other than the employee's foreman or department head conduct all or part of the training. In only 15 of the 59 companies employing instructors, is all the training work carried on by full-time instructors who are not part of the line organization.

In all but 4 out of 167 companies having apprentice training, part or all of the training takes place on the job. In only three, is the entire apprentice training given in a school with no parallel training on the job, while 53 companies use a combined schoolroom and on-the-job program. This leaves over two-thirds of the companies which are carrying on their entire apprentice training on the job. In almost 95 per cent of the companies, this training is carried on either altogether or in part by foremen or other line employees. Fifty companies employ full-time instructors and 49 use foremen only in training their apprentices. Two-thirds of the companies also expect their apprentices to take related technical instruction in schools as additional background for the work.

While 55 companies maintain, in part or altogether, an industrial school or night classes in which their employees may receive supplementary education, 95 companies pay a substantial portion of the expense necessary for their employees to attend educational institutions. Twenty-nine of the 55 companies maintain a school, giving no refunds for expenses incurred in study in outside educational institutions; 69 of the 95 companies giving refunds for expenses incurred in outside study do not offer courses in schools which they

maintain. This may be significant as indicating a tendency toward spending the money indirectly in supporting regularly-maintained public institutions rather than in subsidizing special schools or classes.

A significantly small figure is the total number of companies replying "yes" to the question, "Does your company conduct training of executives and supervisors on how to train?" Only 48 companies replied in the affirmative. The material concerning this training and those who conduct the courses, is apparently divided about equally between outside organizations or universities, and staff specialists within the companies themselves.

American Management Association

Industrial Training Group

Answers to Questionnaire on Industrial Training
(328 replies to January 24, 1930)

1. a. Does your company carry on formal *managerial* training (i.e., are present executives, more than one step removed from the "rank and file" employees, given special training to improve their ability as executives)? 70
   b. Does this training take the form of a training course? 57
   c. If so, is the course conducted by a line executive? 36
   d. Or, is the training course conducted by a staff specialist? 32
   e. Is the material used prepared by a staff specialist? 32
   f. Is the material used prepared by an ouside organization? 24
   g. Is the material prepared in cooperation between the management and the specialist? 43
   h. Does the training include a rotation assignment to various company departments? 36
2. a. Does your company carry on systematic supervisory or foreman training of the men immediately in charge of the "rank and file"? 129
   b. If meetings are held, are they conducted by the foremen's superior? 86
   c. Are they conducted by a staff man other than their superior? 53
   d. Is the training material prepared within the department? 70
   e. Is the training material prepared by a company training specialist? 42
   f. Is the training material prepared by an outside organization? 43
   g. Is the training program carried out by the distribution of written material rather than the holding of meetings? 6
3. a. Does your company carry on systematic job training? 113
   b. If so, is this carried out "on the job"? 109
   c. Is it carried on in a special location or at special hours? 31
   d. Is the training conducted by an instructor other than the employee's foreman or department head? 59
   e. Is the training carried on by full-time instructors? 39
   f. Is the training carried on by foremen, line executives, or other line employees? 98
4. a. Does your company conduct apprentice training? 167
   b. If so, is this "on the job"? 163
   c. Is it conducted in a special location or school? 59
   d. Is the training carried on by full-time instructors? 50
   e. Is the training carried on by foremen or other line employees? 148
   (By foremen only) 49
   f. Does your company train apprentices by the "pick-up" method? 51
   g. Is the training definitely scheduled as to assignment period? 118
   h. What is the total length of the period? ..... 1 week to 7 years
   i. Is there related technical instruction? 101
5. Does your company maintain, as an educational adjunct, an industrial school or night classes in which your employees may receive supplementary education? 55
6. a. Does your company pay any portion of the tuition or expense incidental to attendance of your employees at outside educational institutions? 95
   b. If so, what part? ..... 3 ..... 33⅓%
   53 ..... 50%
   28 ..... 100%
7. a. Does your company conduct training of executives and supervisors on how to train? 48
   b. If so, who conducts this training program?
   Outside organization 10
   Company staff, or executive 38
   c. Who prepares the training material?
   Outside organization 9
   Company staff, or executive 39
   d. What is the company rank of the men who receive this training? Supervisors and Foremen to major department heads.